CHAPTER 6

FUTURE DIRECTIONS IN THE LOWER ELK RIVER WATERSHED

6.1. BACKGROUND.

The Watershed Water Quality Management Plan serves as a comprehensive inventory of resources and stressors in the watershed, a recommendation for control measures, and a guide for planning activities in the next five-year watershed cycle and beyond. Water quality improvement will be a result of implementing both regulatory and nonregulatory programs.

In addition to the NPDES program, some state and federal regulations, such as the TMDL and ARAP programs, address point and nonpoint issues. Construction and MS4 stormwater rules (implemented under the NPDES program) are transitioning from Phase 1 to Phase 2. More information on stormwatrer rules may be found at: http://www.state.tn.us/environment/wpc/stormh2o/MS4.htm.

This Chapter addresses point and nonpoint source approaches to water quality problems in the Lower Elk River Watershed as well as specific NPDES permittee information.

6.2. COMMENTS FROM PUBLIC MEETINGS. Watershed meetings are open to the public, and most meetings were represented by citizens who live in the watershed, NPDES permitees, business people, farmers, and local river conservation interests. Locations for meetings were frequently chosen after consulting with people who live and work in the watershed. Everyone with an interest in clean water is encouraged to be a part of the public meeting process. The times and locations of watershed meetings are posted at: http://www.state.tn.us/environment/wpc/public.htm.

6.2.A. Year 1 Public Meeting. The first Lower Elk River Watershed public meeting was held April 16, 1997 in Pulaski. The goals of the meeting were to 1)present, and review the objectives of, the Watershed Approach, 2)introduce local, state, and federal agency and nongovernment organization partners, 3)review water quality monitoring strategies, and 4)solicit input from the public.

Major Concerns/Comments

- Effects of the Watershed Approach (cycle) on permit holders
- Nonpoint sources of pollution
- Water quality modeling not available to permitees
- The effect of naturally high phosphate in local streams on permit limits
- Sediment getting into streams

6.2.B. Year 3 Public Meeting. The second Pickwick Lake Watershed public meeting was held October 26, 1999 at the courthouse in Winchester. The goals of the meeting were to 1)provide an overview of the watershed approach, 2)review the monitoring strategy, 3)summarize the most recent water quality assessment, 4)discuss the TMDL schedule and citizens' role in commenting on draft TMDLs, and 5)discuss BMPs and other nonpoint source tools available through the Tennessee Department of Agriculture 319 Program and NRCS conservation assistance programs.

6.2.C. Year 5 Public Meeting. The third scheduled Lower Elk River Watershed public meeting was held October 16, 2003 at the Pulaski Recreation Center. The meeting featured six educational components:

- Overview of draft Watershed Water Quality Management Plan slide show
- Benthic macroinvertebrate samples and interpretation
- SmartBoard™ with interactive GIS maps
- "How We Monitor Streams" self-guided slide show
- "Why We Do Biological Sampling" self-guided slide show
- Tennessee Valley Authority display

In addition, citizens had the opportunity to make formal comments on the draft Watershed Water Quality Management Plan and to rate the effectiveness of the meeting.

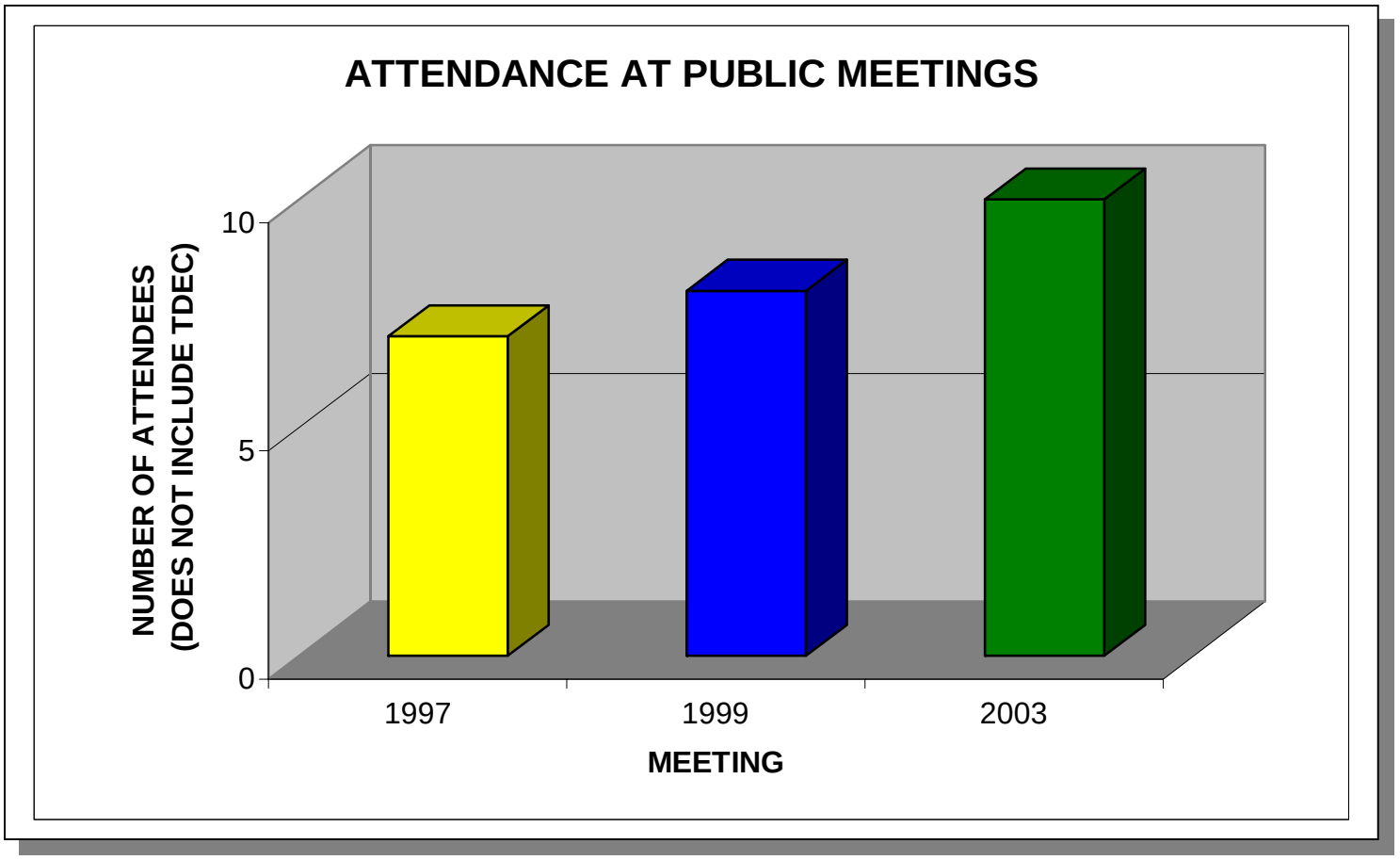

Figure 6-1. Attendance at Public Meetings in the Lower Elk River Watershed. *The 1997 and 1999 watershed meeting numbers represent Lower Elk River, Upper Elk River, Pickwick Lake and Wheeler Lake Watersheds joint meetings.*

Figure 6-2. Watershed meetings begin with an educational slide program about the watershed and a review of the draft Watershed Water Quality Management Plan.

Figure 6-3. Partners, like the Tennessee Valley Authority, are important in the watershed approach, and use the watershed meetings to communicate their activities to the public.

6.3. APPROACHES USED.

6.3.A. Point Sources. Point source contributions to stream impairment are primarily addressed by NPDES and ARAP permit requirements and compliance with the terms of the permits. Notices of NPDES and ARAP draft permits available for public comment can be viewed at http://www.state.tn.us/environment/wpc/wpcppo/. Discharge monitoring data submitted by NPDES-permitted facilities may be viewed at http://www.epa.gov/enviro/html/pcs/pcs_query_java.html.

The purpose of the TMDL program is to identify remaining sources of pollution and allocate pollution control needs in places where water quality goals are still not being achieved. TMDL studies are tools that allow for a better understanding of load reductions necessary for impaired streams to return to compliance with water quality standards. More information about Tennessee's TMDL program may be found at:
http://www.state.tn.us/environment/wpc/tmdl.php

TMDLs are prioritized for development based on many factors.

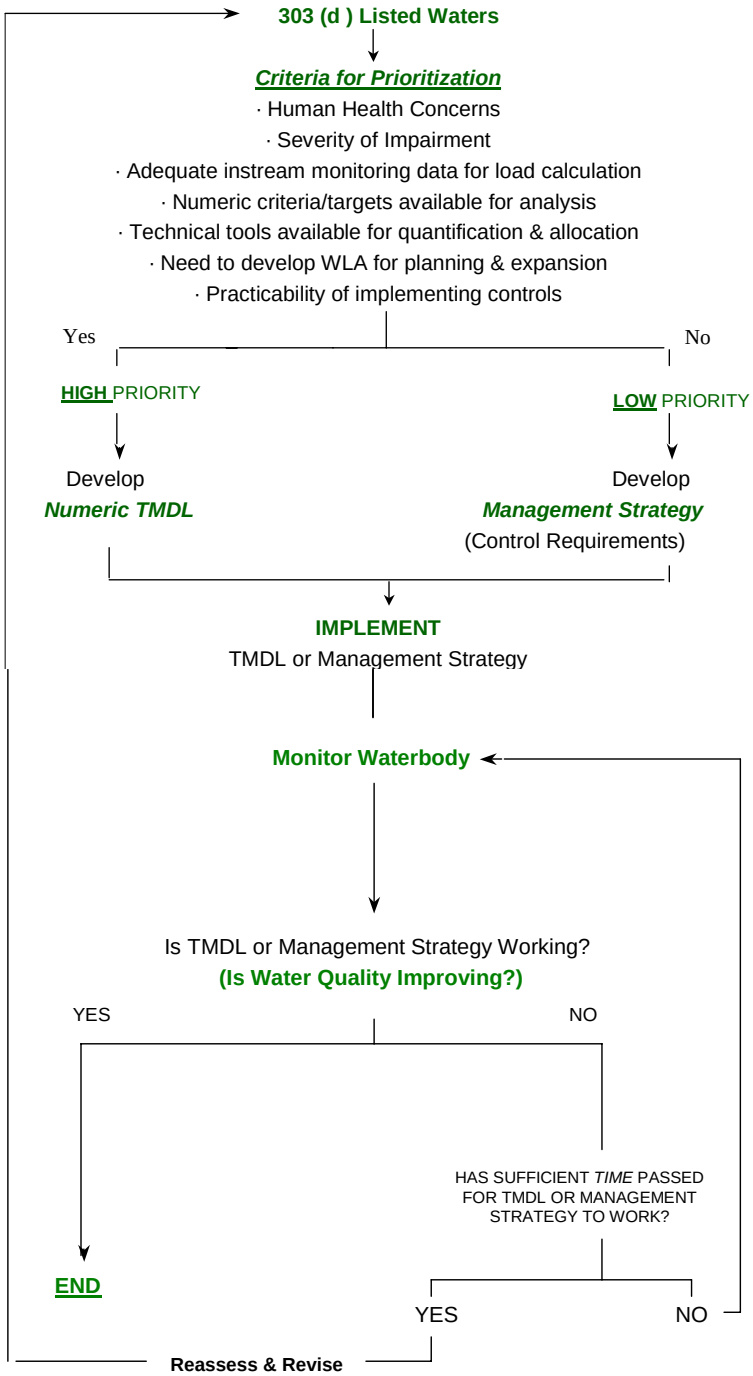

Figure 6.4. Prioritization scheme for TMDL Development.

6.3.B. Nonpoint Sources

Common nonpoint sources of pollution include urban runoff, riparian vegetation removal, and inappropriate land development, agricultural, and road construction practices. Since nonpoint pollution exists essentially everywhere rain falls and drains to a stream, existing point source regulations can have only a limited effect, so other measures are necessary.

There are several state and federal regulations that address some of the contaminants impacting waters in the Lower Elk River Watershed. Most of these are limited to only point sources: a pipe or ditch. Often, controls of point sources are not sufficient to protect waters, so other measures are necessary. Some measures include voluntary efforts by landowners and volunteer groups, while others may involve new regulations. Many agencies, including the Tennessee Department of Agriculture and NRCS, offer financial assistance to landowners for corrective actions (like Best Management Practices) that may be sufficient for recovery of impacted streams. Many nonpoint problems will require an active civic involvement at the local level geared towards establishment of improved zoning guidelines, building codes, streamside buffer zones and greenways, and general landowner education.

The following text describes certain types of impairments, causes, suggested improvement measures, and control strategies. The suggested measures and streams are only examples and efforts should not be limited to only those streams and measures mentioned.

6.3.B.i. Sedimentation.

6.3.B.i.a. From Construction Sites. Construction activities have historically been considered “nonpoint sources.” In the late 1980’s, EPA designated them as being subject to NPDES regulation if more than 5 acres are disturbed. In the spring of 2003, that threshold became 1 acre. The general permit issued for such construction sites sets out conditions for maintenance of the sites to minimize pollution from stormwater runoff, including requirements for installation and inspection of erosion controls. Also, the general permit imposes more stringent inspection and self-monitoring requirements on sites in the watershed of streams that are already impaired due to sedimentation. Regardless of the size, no construction site is allowed to cause a condition of pollution.

Construction sites within a sediment-impaired watershed may also have higher priority for inspections by WPC personnel, and are likely to have enforcement actions for failure to control erosion. Examples of these streams are Richland Creek and an unnamed tributary to Richland Creek located in Pulaski, TN.

The same requirements apply to sites in the drainage of high quality waters.

6.3.B.i.b. From Channel and/or Bank Erosion. Methods or controls that might be necessary to address common problems are:

Voluntary activities

- Re-establishment of bank vegetation (examples: Corn Creek, Richland Creek, and unnamed tributary to Richland Creek).
- Establish off channel watering areas for cattle by moving watering troughs and feeders back from stream banks.
- Limit cattle access to streams and bank vegetation (example: Corn Creek).

Additional strategies

- Increase efforts in the Master Logger program to recognize impaired streams and require more effective management practices.
- Community planning for the impacts of development on small streams.
- Restrictions requiring post construction run-off rates to be no greater than pre-construction rates in order to avoid in-channel erosion.
- More frequent construction stormwater inspections (examples: Corn Creek, Richland Creek, and unnamed tributary to Richland Creek).
- Additional restrictions on logging in streamside management zones.
- Prohibition on clearing of stream and ditch banks. *Note: Permits may be required for any work along streams.*
- Additional restriction to road and utilities crossings of streams.
- Restrictions on the use of off-highway vehicles on stream banks and in stream channels.

6.3.B.i.c. From Agriculture and Silviculture. Even though there is an exemption in the Water Quality Control Act stating that normal agricultural and silvicultural practices that do not result in a point source discharge do not have to obtain a permit, efforts are being made to address impacts due to these practices.

The Master Logger Program has been in place for several years to train loggers how to plan their logging activities and to install Best management Practices that lessen the impact of logging activities. Recently, laws and regulations were enacted which established the expected BMPs to be used and allows the Commissioners of the Departments of Environment and Conservation and of Agriculture to stop a logging operation that has failed to install these BMPs and so are impacting streams.

Since the Dust Bowl era, the agriculture community has strived to protect the soil from wind and soil erosion. Agencies such as the Natural Resources Conservation Service (NRCS), the University of Tennessee Agricultural Extension Service, and the Tennessee Department of Agriculture have worked to identify better ways of farming, to educate the farmers, and to install the methods that address the sources of some of the impacts due to agriculture. Cost sharing is available for many of these measures. Corn Creek and Town Creek can benefit from agricultural BMPs.

6.3.B.ii. Pathogen Contamination.

Possible sources of pathogens are inadequate or failing septic tank systems, overflows or breaks in public sewer collection systems, poorly disinfected discharges from sewage treatment plants, and fecal matter in streams and storm drains due to pets, livestock and wildlife. Permits issued by the Division of Water Pollution Control regulate discharges from point sources and require adequate control for these sources. Individual homes are required to have subsurface, on-site treatment (i.e., septic tank and field lines) if public sewers are not available. Septic tank and field lines are regulated by the Division of Ground Water Protection within TDEC and delegated county health departments. In addition to discharges to surface waters, businesses may employ either subsurface or surface disposal of wastewater. The Division of Water Pollution Control regulates surface disposal.

Other measures that may be necessary to control pathogens are:

Voluntary activities

- Off-channel watering of livestock (examples: Coffey Creek, Corn Creek, Town Creek, and Elk River).
- Limiting livestock access to streams.
- Proper management of animal waste from feeding operations.

Enforcement strategies

- Greater enforcement of regulations governing on-site wastewater treatment.
- Timely and appropriate enforcement for non-complying sewage treatment plants, large and small, and their collection systems.
- More frequent inspections of municipal sewage treatment plants (example: Town Creek).
- Identification of Concentrated Animal Feeding Operations not currently permitted, and enforcement of current regulations.
- More frequent stream monitoring (examples: Coffey Creek and Corn Creek).

Additional strategies

- Restrict development in areas where sewer is not available and treatment by subsurface disposal is not an option due to poor soils, floodplains, or high water tables.
- Develop and enforce leash laws and controls on pet fecal material.
- Greater efforts by sewer utilities to identify leaking lines or overflowing manholes.

6.3.B.iii. Excessive Nutrients and/or Dissolved Oxygen Depletion.

These two impacts are usually listed together because high nutrients often contribute to low dissolved oxygen within a stream. Since nutrients often have the same source as pathogens, the measures previously listed can also address many of these problems. Elevated nutrient loadings are also often associated with urban runoff from impervious surfaces and from fertilized lawns and croplands. More frequent stream monitoring and STP inspections can address some problems in Town Creek and Corn Creek.

Other sources of nutrients can be addressed by:

Voluntary activities

- Encourage no-till farming.
- Encourage farmers to use the proper rate of fertilizer for the soil and crop.
- Educate homeowners and lawn care companies in the proper application of fertilizers.
- Encourage landowners, developers, and builders to leave stream buffer zones. Streamside vegetation can filter out many nutrients and other pollutants before they reach the stream. These riparian buffers are also vital along livestock pastures (examples: Town Creek and Corn Creek).
- Use grassed drainage ways that can remove fertilizer before it enters streams.
- Use native plants for landscaping since they don't require as much fertilizer and water.

Physical changes to streams can prevent them from providing enough oxygen to biodegrade the materials that are naturally present. A few additional actions can address this problem:

- Maintain shade over a stream. Cooler water can hold more oxygen and retard the growth of algae.
- Discourage impoundments. Ponds and lakes do not aerate water. *Note: Permits may be required for any work on a stream, including impoundments.*

6.3.B.iv. Toxins and Other Materials.

Many materials enter our streams due to apathy, or lack of civility or knowledge by the public. Litter in roadside ditches, garbage bags tossed over bridge railings, paint brushes washed off over storm drains, and oil drained into ditches are all examples of pollution in streams. Some can be addressed by:

Voluntary activities

- Providing public education.
- Painting warnings on storm drains that connect to a stream.
- Sponsoring community clean-up days.
- Landscaping of public areas.
- Encouraging public surveillance of their streams and reporting of dumping activities to their local authorities.

Needing regulation

- Prohibition of illicit discharges to storm drains.
- Litter laws and strong enforcement at the local level.

6.3.B.v. Habitat Alteration.

The alteration of the habitat within a stream can have severe consequences. Whether it is the removal of the vegetation providing a root system network for holding soil particles

together, the release of sediment, which increases the bed load and covers benthic life and fish eggs, the removal of gravel bars, “cleaning out” creeks with heavy equipment, or the impounding of the water in ponds and lakes, many alterations impair the use of the stream for designated uses. Habitat alteration also includes the draining or filling of wetlands.

Measures that can help address this problem are:

Voluntary activities

- Sponsoring litter pickup days to remove litter that might enter streams.
- Organizing stream cleanups removing trash, limbs and debris before they cause blockage (example: unnamed tributary to Richland Creek).
- Avoiding use of heavy equipment to “clean out” streams.
- Planting vegetation along streams to stabilize banks and provide habitat (example: unnamed tributary to Richland Creek).
- Encouraging developers to avoid extensive culverts in streams.

Current regulations

- Restrict modification of streams by such means as culverting, lining, or impounding.
- Require mitigation for impacts to streams and wetlands when modifications are allowed.

Additional Enforcement

- Increased enforcement may be needed when violations of current regulations occur.
- Increased ARAP inspections (example: unnamed tributary to Richland Creek).
- More frequent industrial stormwater inspections of Pulaski Industrial Park.

6.4. PERMIT REISSUANCE PLANNING

Under the *Tennessee Water Quality Control Act*, municipal, industrial and other dischargers of wastewater must obtain a permit from the Division. Approximately 1,700 permits have been issued in Tennessee under the federally delegated National Pollutant Discharge Elimination System (NPDES). These permits establish pollution control and monitoring requirements based on protection of designated uses through implementation of water quality standards and other applicable state and federal rules.

The following three sections provide specific information on municipal, industrial, and water treatment plant active permit holders in the Lower Elk River Watershed. Compliance information was obtained from EPA's Permit Compliance System (PCS). All data was queried for a five-year period between January 1, 2001 and December 31, 2006. PCS can be accessed publicly through EPA's Envirofacts website. This website provides access to several EPA databases to provide the public with information about environmental activities that may affect air, water, and land anywhere in the United States:

http://www.epa.gov/enviro/html/ef_overview.html

Stream Segment information, including designated uses and impairments, are described in detail in Chapter 3, *Water Quality Assessment of the Lower Elk River Watershed*.

6.4.A. Municipal Permits

TN0021687 Pulaski STP

Discharger rating: Major
City: Pulaski
County: Giles
EFO Name: Columbia
Issuance Date: 8/31/06
Expiration Date: 10/31/07
Receiving Stream(s): Richland Creek at mile 23.3
HUC-12: 06030004 (Lower Elk)
Effluent Summary: Treated municipal wastewater from Outfall 001
Treatment system: WAS to anaerobic dig to land appl or drybds to land appl

Segment	TN06030004017_2000
Name	Richland Creek
Size	26.7
Unit	Miles
First Year on 303(d) List	2004
Designated Uses	Industrial Water Supply (Supporting), Fish and Aquatic Life (Non-Supporting), Recreation (Non-Supporting), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting)
Causes	Oil and Grease, Sedimentation/Siltation, Escherichia coli
Sources	Industrial Point Source Discharge, Municipal (Urbanized High Density Area), Site Clearance (Land Development or Redevelopment), Grazing in Riparian or Shoreline Zones, Sanitary Sewer Overflows (Collection System Failures)

Table 6-1. Stream Segment Information for Pulaski STP.

PARAMETER	*SEASON*	*LIMIT*	*UNITS*	*SAMPLE DESIGNATOR*	*MONITORING FREQUENCY*	*SAMPLE TYPE*	*MONITORING LOCATION*
Ammonia as N (Total)	Summer	4	mg/L	DMax Conc	3/Week	Composite	Effluent
Ammonia as N (Total)	Summer	100	lb/day	WAvg Load	3/Week	Composite	Effluent
Ammonia as N (Total)	Summer	2	mg/L	MAvg Conc	3/Week	Composite	Effluent
Ammonia as N (Total)	Summer	67	lb/day	MAvg Load	3/Week	Composite	Effluent
Ammonia as N (Total)	Summer	3	mg/L	WAvg Conc	3/Week	Composite	Effluent
Ammonia as N (Total)	Winter	16	mg/L	DMax Conc	3/Week	Composite	Effluent
Ammonia as N (Total)	Winter	12	mg/L	WAvg Conc	3/Week	Composite	Effluent
Ammonia as N (Total)	Winter	267	lb/day	MAvg Load	3/Week	Composite	Effluent
Ammonia as N (Total)	Winter	8	mg/L	MAvg Conc	3/Week	Composite	Effluent

Table 6-2a.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Ammonia as N (Total)	Winter	400	lb/day	WAvg Load	3/Week	Composite	Effluent
CBOD % Removal	All Year	85	Percent	MAvg % Removal	3/Week	Calculated	% Removal
CBOD5	Summer	25	mg/L	DMax Conc	3/Week	Composite	Effluent
CBOD5	Summer	677	lb/day	DMax Load	3/Week	Composite	Effluent
CBOD5	Summer	834	lb/day	DMax Load	3/Week	Composite	Effluent
CBOD5	Summer	20	mg/L	MAvg Conc	3/Week	Composite	Effluent
CBOD5	Summer	500	lb/day	MAvg Load	3/Week	Composite	Effluent
CBOD5	Summer	15	mg/L	DMin Conc	3/Week	Composite	Effluent
CBOD5	Winter	40	mg/L	DMax Conc	3/Week	Composite	Effluent
CBOD5	Winter	834	lb/day	MAvg Load	3/Week	Composite	Effluent
CBOD5	Winter	1334	lb/day	DMax Load	3/Week	Composite	Effluent
CBOD5	Winter	25	mg/L	DMin Conc	3/Week	Composite	Effluent
CBOD5	Winter	1168	lb/day	DMax Load	3/Week	Composite	Effluent
CBOD5	Winter	35	mg/L	MAvg Conc	3/Week	Composite	Effluent
D.O.	All Year	6	mg/L	DMin Conc	Weekdays	Grab	Effluent
E. coli	All Year	126	#/100mL	MAvg Geo Mean	3/Week	Grab	Effluent
E. coli	All Year	941	#/100mL	DMax Conc	3/Week	Grab	Effluent
Flow	All Year		MGD	MAvg Load	Weekly	Continuous	Intake
Flow	All Year		MGD	DMax Load	Weekly	Continuous	Effluent
Flow	All Year		MGD	MAvg Load	Weekly	Continuous	Effluent
Flow	All Year		MGD	DMax Load	Weekly	Continuous	Intake
IC25 7day Ceriodaphnia Dubia	All Year	28.4	Percent	DMin Conc	Quarterly	Composite	Effluent
IC25 7day Fathead Minnows	All Year	28.4	Percent	DMin Conc	Quarterly	Composite	Effluent
Settleable Solids	All Year	1	mL/L	DMax Conc	3/Week	Composite	Effluent
TRC	All Year	0.07	mg/L	DMax Conc	Weekdays	Grab	Effluent
TSS	All Year	45	mg/L	DMax Conc	3/Week	Composite	Effluent
TSS	All Year		mg/L	DMax Conc	3/Week	Composite	Influent (Raw Sewage)
TSS	All Year	1334	lb/day	WAvg Load	3/Week	Composite	Effluent
TSS	All Year	40	mg/L	WAvg Conc	3/Week	Composite	Effluent
TSS	All Year		mg/L	MAvg Conc	3/Week	Composite	Influent (Raw Sewage)
TSS	All Year	1001	lb/day	MAvg Load	3/Week	Composite	Effluent
TSS	All Year	30	mg/L	MAvg Conc	3/Week	Composite	Effluent
TSS	All Year	1501	lb/day	DMax Load	3/Week	Composite	Effluent
TSS % Removal	All Year	85	Percent	MAvg % Removal	3/Week	Calculated	% Removal
pH	All Year	9	SU	DMax Conc	Weekdays	Grab	Effluent
pH	All Year	6	SU	DMin Conc	Weekdays	Grab	Effluent

Table 6-2b.

Tables 6-2a and b. Permit Limits for Pulaski STP.

Compliance History:
The following exceedences were noted in PCS:

- 54 TSS
- 27 Settleable Solids
- 1 Ammonia
- 22 CBOD
- 17 Fecal Coliform
- 28 Suspended Solids % Removal
- 2 Chlorine
- 308 Bypasses
- 207 Overflows

Enforcement:
Commissioner Order # 04-0454
Database Notes: Order issued because of chronic effluent violations from May 2002 through April 2004. This became an Agreed Order with the same case number on April 28, 2005. E&C Section received Phase I Corrective Action Plan (CAP) on August 8, 2005. Sent to Phil Simmons for review and approval. Received revised CAP/Engineering Report (ER) on 3/28/06. Received revised CAP/ER on 5/17/06. On 5/26/06, Municipal Facilities Section sent a letter approving the CAP/ER.

Comments:
None.

TN0054810 Richland School

Discharger rating: Major
City: Lynnville
County: Giles
EFO Name: Columbia
Issuance Date: 6/28/02
Expiration Date: 6/30/07
Receiving Stream(s): Robertson Fork Creek Mile 1.2
HUC-12: 06030004
Effluent Summary: Treated domestic wastewater from Outfall 001
Treatment system: Septic tank, recirculation sand filter and UV disinfection

Segment	TN06030004023_0300
Name	Robertson Fork Creek
Size	47.2
Unit	Miles
First Year on 303(d) List	2004
Designated Uses	Fish and Aquatic Life (Supporting), Recreation (Non-Supporting), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting)
Causes	Escherichia coli
Sources	Grazing in Riparian or Shoreline Zones

Table 6-3. Stream Segment Information for Richland school.

PARAMETER	*SEASON*	*LIMIT*	*UNITS*	*SAMPLE DESIGNATOR*	*MONITORING FREQUENCY*	*SAMPLE TYPE*	*MONITORING LOCATION*
Ammonia as N (Total)	Summer	4	mg/L	DMax Conc	2/Month	Grab	Effluent
Ammonia as N (Total)	Summer	2	mg/L	MAvg Conc	2/Month	Grab	Effluent
Ammonia as N (Total)	Winter	10	mg/L	DMax Conc	2/Month	Grab	Effluent
Ammonia as N (Total)	Winter	5	mg/L	MAvg Conc	2/Month	Grab	Effluent
CBOD5	All Year	20	mg/L	DMax Conc	2/Month	Grab	Effluent
CBOD5	All Year	10	mg/L	MAvg Conc	2/Month	Grab	Effluent
D.O.	All Year	6	mg/L	DMin Conc	Weekdays	Grab	Effluent
Fecal Coliform	All Year	1000	#/100mL	DMax Conc	2/Month	Grab	Effluent
Fecal Coliform	All Year	200	#/100mL	MAvg Geo Mean	2/Month	Grab	Effluent
Settleable Solids	All Year	1	mL/L	DMax Conc	2/Week	Grab	Effluent
TRC	All Year	0.5	mg/L	DMax Conc	Weekdays	Grab	Effluent
TSS	All Year	45	mg/L	DMax Conc	2/Month	Grab	Effluent
TSS	All Year	30	mg/L	MAvg Conc	2/Month	Grab	Effluent
pH	All Year	8.5	SU	DMax Conc	2/Week	Grab	Effluent
pH	All Year	6.5	SU	DMin Conc	2/Week	Grab	Effluent

Comments:
None.

TN0061841 Cornersville Sewage Treatment Plant

Discharger rating: Major
City: Lynnville
County: Marshall
EFO Name: Columbia
Issuance Date: 3/31/02
Expiration Date: 2/26/07
Receiving Stream(s): Town Creek mile 0.9
HUC-12: 06030004 (Lower Elk)
Effluent Summary: Treated municipal wastewater from Outfall 001
Treatment system: A combined equalization/sludge holding basin, a sequential batch reactor (SBR), an ultraviolet disinfection chamber, and a cascade aeration unit

PARAMETER	*SEASON*	*LIMIT*	*UNITS*	*SAMPLE DESIGNATOR*	*MONITORING FREQUENCY*	*SAMPLE TYPE*	*MONITORING LOCATION*
Ammonia as N (Total)	Summer	2.5	mg/L	DMax Conc	3/Week	Composite	Effluent
Ammonia as N (Total)	Summer	1.7	lb/day	DMax Load	3/Week	Composite	Effluent
Ammonia as N (Total)	Summer	1.7	lb/day	DMax Load	3/Week	Composite	Effluent
Ammonia as N (Total)	Summer	1.1	mg/L	WAvg Conc	3/Week	Composite	Effluent
Ammonia as N (Total)	Summer	0.9	lb/day	MAvg Load	3/Week	Composite	Effluent
Ammonia as N (Total)	Summer	2	mg/L	MAvg Conc	3/Week	Composite	Effluent
Ammonia as N (Total)	Winter	4	mg/L	DMax Conc	3/Week	Composite	Effluent
Ammonia as N (Total)	Winter	2	lb/day	DMax Load	3/Week	Composite	Effluent
Ammonia as N (Total)	Winter	1.9	mg/L	WAvg Conc	3/Week	Composite	Effluent
Ammonia as N (Total)	Winter	1.6	lb/day	MAvg Load	3/Week	Composite	Effluent
Ammonia as N (Total)	Winter	2.4	mg/L	MAvg Conc	3/Week	Composite	Effluent
Ammonia as N (Total)	Winter	3.3	lb/day	DMax Load	3/Week	Composite	Effluent
CBOD % Removal	All Year	75	Percent	MAvg % Removal	3/Week	Calculated	% Removal
CBOD5	All Year	20	mg/L	DMax Conc	3/Week	Composite	Effluent
CBOD5	All Year	15	mg/L	MAvg Conc	3/Week	Composite	Effluent
CBOD5	All Year	8	lb/day	MAvg Load	3/Week	Composite	Effluent
CBOD5	All Year		mg/L	MAvg Conc	3/Week	Composite	Influent (Raw Sewage)
CBOD5	All Year	10	mg/L	DMin Conc	3/Week	Composite	Effluent
CBOD5	All Year		mg/L	DMax Conc	3/Week	Composite	Influent (Raw Sewage)
CBOD5	All Year	13	lb/day	DMax Load	3/Week	Composite	Effluent
CBOD5	All Year	13	lb/day	DMax Load	3/Week	Composite	Effluent
D.O.	All Year	6	mg/L	DMin Conc	Weekdays	Grab	Effluent
E. coli	All Year	126	#/100mL	MAvg Geo Mean	3/Week	Grab	Effluent
Fecal Coliform	All Year	1000	#/100mL	DMax Conc	3/Week	Grab	Effluent
Fecal Coliform	All Year	200	#/100mL	MAvg Geo Mean	3/Week	Grab	Effluent
Flow	All Year		MGD	DMax Load	Daily	Continuous	Effluent
Flow	All Year		MGD	MAvg Load	Daily	Continuous	Effluent
Nitrogen Total (as N)	Summer		mg/L	MAvg Conc	2/Month	Composite	Effluent
Phosphorus, Total	Summer		mg/L	MAvg Conc	2/Month	Composite	Effluent
Settleable Solids	All Year	1	mL/L	DMax Conc	3/Week	Composite	Effluent
TSS	All Year		mg/L	DMax Conc	3/Week	Composite	Influent (Raw Sewage)
TSS	All Year	33	lb/day	DMax Load	3/Week	Composite	Effluent

Table 6-4a.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
TSS	All Year		mg/L	MAvg Conc	3/Week	Composite	Influent (Raw Sewage)
TSS % Removal	All Year	60	Percent	MAvg % Removal	3/Week	Calculated	% Removal
pH	All Year	9	SU	DMax Conc	Weekdays	Grab	Effluent
pH	All Year	6	SU	DMin Conc	Weekdays	Grab	Effluent

Table 6-4b.

Table 6-4a and b. Permit Limits for Cornersville STP.

Compliance History:
The following exceedences were noted in PCS:

- 4 Settleable Solids
- 8 Ammonia
- 4 CBOD
- 2 Fecal Coliform
- 4 Suspended Solids % Removal
- 12 Overflows
- 13 Bypasses

Comments:
None.

6.4.B. Industrial Permits

TN0054640 Tennessee Valley Recycling, LLC

Discharger rating: Minor
City: Pulaski
County: Giles
EFO Name: Columbia
Issuance Date: 7/02/04
Expiration Date: 7/02/07
Receiving Stream(s): Richland Creek below the low head dam for the Pulaski water supply at mile 24.1
HUC-12: 06030004 (Lower Elk)
Effluent Summary: Storm water runoff from Outfall 001
Treatment system: -

Segment	TN06030004017_2000
Name	Richland Creek
Size	26.7
Unit	Miles
First Year on 303(d) List	2004
Designated Uses	Industrial Water Supply (Supporting), Fish and Aquatic Life (Non-Supporting), Recreation (Non-Supporting), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting)
Causes	Oil and Grease, Sedimentation/Siltation, Escherichia coli
Sources	Industrial Point Source Discharge, Municipal (Urbanized High Density Area), Site Clearance (Land Development or Redevelopment), Grazing in Riparian or Shoreline Zones, Sanitary Sewer Overflows (Collection System Failures)

Table 6-5. Stream Segment Information for Tennessee Valley Recycling, LLC.

PARAMETER	*SEASON*	*LIMIT*	*UNITS*	*SAMPLE DESIGNATOR*	*MONITORING FREQUENCY*	*SAMPLE TYPE*	*MONITORING LOCATION*
CBOD5	All Year		mg/L	DMax Conc	Monthly	Composite	Effluent
Cd (T)	All Year		mg/L	DMax Conc	Monthly	Composite	Effluent
Cu (T)	All Year		mg/L	DMax Conc	Monthly	Composite	Effluent
Flow	All Year		MGD	DMax Load	1/Discharge	Estimate	Effluent
Flow, Totalizer	All Year		Million Gallons (3R)	DMax Load	Monthly	Recorder	Effluent
Hg (T)	All Year	0.0054	lb/day	DMax Load	1/Discharge	Composite	Effluent
Nitrogen Ammonia Total (as NH4)	All Year		mg/L	DMax Conc	Monthly	Composite	Effluent
Oil and Grease (Freon EM)	All Year	15	mg/L	DMax Conc	Monthly	Grab	Effluent
Oil and Grease (Freon EM)	All Year	10	mg/L	MAvg Conc	Monthly	Grab	Effluent
Pb (T)	All Year	1.28	mg/L	DMax Conc	1/Discharge	Composite	Effluent
Pb (T)	All Year	1.6	lb/day	DMax Load	1/Discharge	Composite	Effluent
Polychlorinated Biphenyls (PCBs)	All Year	4.8E-05	lb/day	DMax Load	1/Discharge	Composite	Effluent
Rainfall	All Year		Inches	DMax Conc	1/Discharge	Not Applicable	Effluent
Rainfall Events	All Year		Hours/Month	DMax Conc	1/Discharge	Measured	Effluent
TSS	All Year	40	mg/L	DMax Conc	Monthly	Composite	Effluent

Table 6-6a.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Zn (T)	All Year	2.2	mg/L	DMax Conc	1/Discharge	Composite	Effluent
Zn (T)	All Year	2.78	lb/day	DMax Load	1/Discharge	Composite	Effluent
pH	All Year	9	SU	DMax Conc	Monthly	Grab	Effluent
pH	All Year	6	SU	DMin Conc	Monthly	Grab	Effluent

Table 6-6b.

Tables 6-6a- b. Permit Limits for Tennessee Valley Recycling, LLC.

Compliance History:
The following exceedences were noted in PCS:

- 15 TSS
- 2 Oil & Grease
- 2 pH
- 1 Lead
- 3 Zinc.

Enforcement:
Commissioner's Order Pending!

Comments:
Receiving and processing metal scrap for recycling.

TN0003441 Pulaski Rubber Company

Discharger rating: Minor
City: Pulaski
County: Giles
EFO Name: Columbia
Issuance Date: 3/31/03
Expiration Date: 12/31/07
Receiving Stream(s): Richland Creek at mile 24.5
HUC-8: 06030004 (Lower Elk)
Effluent Summary: noncontact cooling water from Outfall 001
Treatment system: -

Segment	TN06030004017_2000
Name	Richland Creek
Size	26.7
Unit	Miles
First Year on 303(d) List	2004
Designated Uses	Industrial Water Supply (Supporting), Fish and Aquatic Life (Non-Supporting), Recreation (Non-Supporting), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting)
Causes	Oil and Grease, Sedimentation/Siltation, Escherichia coli
Sources	Industrial Point Source Discharge, Municipal (Urbanized High Density Area), Site Clearance (Land Development or Redevelopment), Grazing in Riparian or Shoreline Zones, Sanitary Sewer Overflows (Collection System Failures)

Table 6-7. Stream Segment Information for Pulaski Rubber Company

Parameter Limits:

PARAMETER	*SEASON*	*LIMIT*	*UNITS*	*SAMPLE DESIGNATOR*	*MONITORING FREQUENCY*	*SAMPLE TYPE*	*MONITORING LOCATION*
pH	All Year	9	SU	DMax Conc	2/Month	Grab	Effluent
pH	All Year	6	SU	DMin Conc	2/Month	Grab	Effluent

Table 6-8. Permit Limits for Pulaski Rubber Company

Compliance History:
None noted.

EFO Comments:
No issues.

TN0067954 Pilot Travel Centers LLC #406

Discharger rating: Minor
City: Lewisburg
County: Giles
EFO Name: Columbia
Issuance Date: 12/30/03
Expiration Date: 12/31/07
Receiving Stream(s): Wet weather conveyance to unnamed tributary to Richland Creek
HUC-8: 06030004 (Lower Elk)
Effluent Summary: Treated process wastewater from Outfall 001
Treatment system: -

PARAMETER	*SEASON*	*LIMIT*	*UNITS*	*SAMPLE DESIGNATOR*	*MONITORING FREQUENCY*	*SAMPLE TYPE*	*MONITORING LOCATION*
Benzene	All Year	0.5	mg/L	DMax Conc	2/Month	Grab	Effluent
Oil and Grease (Freon EM)	All Year	15	mg/L	DMax Conc	2/Month	Grab	Effluent
TSS	All Year	40	mg/L	DMax Conc	2/Month	Grab	Effluent
pH	All Year	9	SU	DMax Conc	2/Month	Grab	Effluent
pH	All Year	6	SU	DMin Conc	2/Month	Grab	Effluent

Table 6-9. Permit Limits

Compliance History:
The following exceedences were noted in PCS:

- 8 TSS
- 1 Oil & Grease
- 1 pH.

Comments:
None.